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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,033	09/07/2001	Philippe Bordes	PF990005	7919

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EXAMINER	
PHILIPPE, GIMS S	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/936,033	BORDES ET AL.	
	Examiner	Art Unit	
	Gims S Philippe	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2, 24, 28, 3, 11, 8, 26, 27, 9,* is/are rejected.

7)☒ Claim(s) *4-7,10,12-15,25 and 29-32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on February 14, 2005 has been entered.

Claim Objections

2. Claims 4 and 25 are objected to because of the following informalities: in claim 4, lines 5-7, the phrase *"on the other hand"* make the claimed limitations ambiguous. Appropriate correction is required.

Claim 5 is objected to because the phrase *"and possibly interpolation on the basis on these curves"* renders the claim ambiguous.
Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, 24, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US Patent no. 5748761) in view of Richards et al. (US Patent no. 5701163).

Regarding claims 1-2, 24, and 28, Chang discloses a method for evaluating the quality of coded images, the method comprising processing a signal representative of an image so as to obtain a processed signal (See Fig. 1, and col. 2, lines 62-67, and col. 3, lines 1-3); constructing a motion vector field by estimating motion between image sequences in the signal representative of the image to get velocity vectors (See Fig. 1, item 103, col. 3, lines 23-27); segmenting the motion vector field according to a motion value of the velocity vectors to get regions (See col. 3, lines 27-34).

It is noted that although Shang provides a map of disparities between image signals (See Shang col. 1, lines 42-58), it is silent about a psychovisual filter to be applied as a function of an estimated velocity of each region to perform a psychovisual filtering of the processed signal as specified in the claim.

Richards discloses a psychovisual filter to be applied as a function of an estimated velocity of each region to perform a psychovisual filtering of the processed signal (See Richards col. 6, lines 1-17).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying Shang's vector estimation by incorporating Richard's psychovisual filter to be applied as a function of an estimated velocity of each region to perform a psychovisual filtering of the processed signal. the motivation for performing such a modification in Chang is to produce a combined vector field out of the filter and to be able to notice unnatural movement of animated sequences especially along and across the edges as taught by Richards.

As per claim 28, most of the limitations of this claim have been noted in the above rejection of claim 1. In addition, the motion vector search in Shang is an example of the MPEG standard (See col. 3, lines 5-42).

5. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US Patent no. 5748761) in view of Richards et al. (US Patent no. 5701163) as applied to claim 1 above, and further in view of Pearlman et al. (US Patent no. 6674911).

As per claim 3, most of the limitations of these claims have been noted in the above rejection.

It is noted that the combination of Chang and Richards is silent about frequency decomposing the images as specified in the claim.

Pearlman discloses frequency decomposing images preceding filtering so as to take account of the velocity of the spatial frequency (See Pearlman col. 14, lines 55-67, col. 15, lines 1-16).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying the combination of Chang and Richards by incorporating Pearlman's step of frequency decomposing images preceding filtering so as to take account of the velocity of the spatial frequency. The motivation for performing such a modification in the proposed combination is to provide advantage over traditional in terms of peak-to-noise ratio and visual quality as taught by Pearlman.

As per claim 11, most of the limitations of this claim have been noted in the above rejection of claim 1. It is noted that although the combination of Shang and Richard discloses filter interpolation (See Richards col. 5, lines 20-28), it is silent about providing a database of filters as specified in the claim.

Pearlman discloses the step of providing a database of filters (See Pearlman col. 14, lines 55-66).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying Shang and Richards motion estimation method by providing Pearlman's database of filters. The motivation for such a modification is to provide the process with advantages over traditional methods and circuitry in term of peak signal-to-noise ratio and better visual quality as taught by Pearlman (See Pearlman col. 15, lines 4-10).

6. Claims 8, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US Patent no. 5748761) in view of Richards et al. (US Patent no. 5701163) as applied to claim 1 above, and further in view of Lennon (US Patent no. 5937097).

Regarding claim 26, most of the limitations of this claim have been noted in the above rejection of claim 24.

It is noted that the combination of Chang and Richards is silent about performing a recomposition of the filtered multiresolution pyramids.

Lennon discloses motion detection including the step of performing a recomposition of the filtered multiresolution pyramids (See Lennon col. 10, lines 33-46). Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying the proposed combination of Chang and Richards by incorporating Lennon's recomposition step. The motivation for performing such a modification is to help in the measuring resolutions of image regions for comparison over time as taught by Lennon (See Lennon col. 10, lines 47-62).

As per claim 27, it is noted that the combination of Chang and Richards is silent about a microprocessor performing the filtering process as specified. However, Pearlman discloses such a microprocessor in fig. 9, item 211. Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of providing such a processor for faster operation.

As per claim 8, while Shang is silent about the filter construction, Pearlman, on the other hand, proposes the obvious construction of filters in col. 6, lines 1-17. The use of these filters will enhance the image around the edges as taught by Pearlman.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US Patent no. 5748761) in view of Richards et al. (US Patent no. 5701163) and Lennon (US Patent no. 5937097) as applied to claim 1 above, and further in view of Greene et al. (US Patent no. 6271825).

Regarding claim 9, most of the limitations of this claim have been noted in the above rejection of claim 1. It is noted that the proposed combination of Chang, Richards and Lennon is silent about performing a Gamma correction and a correction according to Weber's law.

Greene discloses correcting images by performing a Gamma correction and a correction according to Weber's law See Greene col. 6, lines 10-38, and col. 7, lines 52-67, and col. 8, lines 1-4).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying the combination of Chang, Richards and Lennon by incorporating Lennon's Gamma and Weber's law corrections for the same purpose of defining the entire image and also to be able to use electronic display as taught by Lennon (See Lennon col. 7, lines 65-67).

8. Claims 4-7, 12-14 and 25 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Claims 10, 15-23, and 29-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chang et al. (US Patent no. 5734737) teaches method for segmenting and estimating a moving object motion using a hierarchy of motion models.
Chang et al. (US Patent no. 6735253) teaches methods and architecture for indexing and editing compressed video over the World Wide Web.
Johnston et al. (US Patent no. 5128756) teaches high definition television coding arrangement with graceful degradation.
Lennon (US Patent no. 5937097) teaches motion detection and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S Philippe whose telephone number is (571) 272-7336. The examiner can normally be reached on M-F (9:30-7:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gims S Philippe
Primary Examiner
Art Unit 2613

GSP

March 14, 2005